

system of comparing the brightness of stars, are therefore requested to make estimates of the magnitude of as many as may be convenient of the stars above mentioned. It is desirable that the estimate should be made, for each star which may be observed, on five different nights, and that each estimate should be, if possible, entirely independent of those previously made. It will add to the value of the work if, on every occasion when the fainter stars are looked for, a record is made of such of them as can then be seen, even if no estimate of their magnitude is attempted.

Observers are also requested to note the approximate places of any stars not represented upon the chart, but within five minutes of the place of the pole at any time between 1880 and 1900. The boundary of this region is represented on the chart by a dotted line. The stars not shown within it have been omitted as unnecessary for the purpose of finding the others, and several of these omitted stars are inconveniently faint for photometric observations; but records of their visibility at any time and place will be valuable as evidence of the state of the atmosphere and character of the instrument employed in the observations.

All astronomers who may be induced by this request to make any observations of the kind just described will confer a favour upon the Harvard College Observatory by sending to it a copy of their records, accompanied by a statement of any modification of the proposed method of observation which they may have adopted, as well as any additional details which may appear desirable, with regard to the instruments employed, &c. Unless the contrary is requested, the results will be published with the photometric measurements obtained at the Harvard College Observatory; and a copy of the publication will be sent to each observer who has co-operated in the work.

It is hoped that a large number of those astronomers whose experience has been sufficient to establish a definite scale for their estimates of stellar magnitude will consent to take part in the proposed observations, in order that the published series of observations may be complete enough to be of general utility.

EDWARD C. PICKERING
Director of the Harvard College Observatory

GEOGRAPHICAL NOTES

At the meeting of the Royal Geographical Society on Monday evening it was announced that the gold medals had that day been awarded to Col. Nicholas Prejevalsky for the great additions he has made to our knowledge of Central and Eastern High Asia by his successive expeditions into the unexplored parts of the great plateau of Mongolia and the lofty deserts of Western Thibet, and for the admirable way in which he has described the regions traversed by him in the published narratives of his journeys; and to Capt. W. J. Gill, R.E., for excellent geographical work performed during two journeys of exploration, voluntarily undertaken, along the northern frontier of Persia in 1873, and over previously untravelled ground in China and Thibet, in 1877; also for the elaborate memoir and route maps contributed to the forthcoming volume of the Society's *Journal*. A paper was afterwards read by the Rev. James McCarthy, of the China Inland Mission, descriptive of the journey which he made, mostly on foot, in 1877, across China, from Chinkiang, on the Yangtze-Kiang, to Bhamò, in Burmah. The leading features of this journey have been fully described in *NATURE*. The most noteworthy incident of the evening was a speech, delivered in his native language by the Marquis Tsêng, Chinese Minister to England and France, expressive of the pleasure which he felt at Mr. McCarthy's acknowledgment of the uniformly courteous treatment he experienced during his long journey.

At the next meeting of the Geographical Society on May 12, the second of the course of scientific lectures of the present session will be delivered by Prof. G. Rolleston, of Oxford, on the "Modifications of the External Aspects of Organic Nature produced by Man's Interference."

NEWS has arrived by the last mail from Zanzibar that Mr. H. M. Stanley is busily occupied in engaging porters for a journey into the interior of Africa, but that he preserves the utmost secrecy as to his intended movements. A rumour is current amongst the porters that their journey is to commence from the west coast; if this be the case, Mr. Stanley must have introduced a radical change into the original plans of the Belgian section of the International African Association, for whom he is believed to be acting. That, accidents apart, he will be more successful than the unfortunate leaders of the first Belgian expedition few will be so rash as to doubt, and he is sure to have good and sufficient reasons for the course he is adopting.

DURING the past few days there has been a considerable exodus of missionary explorers. Dr. James Stewart, the well-known head of the Livingstonia station, has returned to his post, and will soon be adding more to our knowledge of the shores of Lake Nyassa. Dr. Joseph Mullens, of the London Missionary Society, who has already done good service to geography in Madagascar, has started for Ujiji, on Lake Tanganyika, and before returning home he will probably make his way down to the north end of Lake Nyassa, thus filling up an important blank in our knowledge of the lake region. Lastly, the Rev. T. J. Comber, of the Baptist Missionary Society, has returned to Western Africa to found a station at San Salvador, and eventually to conduct a missionary expedition to the upper waters of the River Congo.

The general report of last year's operations of the Marine Survey of India, under Commander A. Dundas Taylor, late I.N., has just reached this country. During that period two parties carried out the following surveys: Ratuagiri, including Mirya and Kalhadevi Bays; Viziadurg, including Rajapur and Ambol Ghur Bays; Paumbeh Pass (between Ceylon and the mainland) and its approaches; Beyapore, Calicut, and Cochin. The natural history investigations of the season have been confined to an examination of the fauna inhabiting the shores in the vicinities of Ratuagiri and Viziadurg, and to the collection and preservation of the various ornithological specimens procured. The area examined includes the tract of country lying between the above places from the sea to the chain of hills known as the Western Ghâts. The examination of the sea-bottom with the dredge was impracticable, owing to the want of a vessel; this want, however, has since been supplied, as was recorded in *NATURE*, vol. xix. p. 298, and no doubt interesting results will be obtained during the present season. Captain Taylor's report is accompanied by a useful map showing the surveys completed by his officers, together with the sheets published or in course of publication, 1877-8.

THE second session of the Congress of Commercial Geography, inaugurated at Paris last year, will be held at Brussels in September, under the presidency of M. Bamps, and arrangements for the meeting have already been commenced.

NEWS has been received from Queensland that the remains of the two Prouts, well-known explorers, have at length been discovered, so that the question of their fate is now finally set at rest.

At the last meeting of the Société de Géographie Commerciale at Paris Dr. Harmand gave some account of his observations in the Laos country of the Indo-Chinese peninsula. He stated that though elephants were common there, ivory was dearer than in Paris, and that the same remark applied to rhinoceros-horn. There are mines of lead, iron, and copper in the country, and probably gold

will be found. The chief productions are indigo, lacquer, saffron, rice, cotton, &c., but the industry of the country is in a very undeveloped state.

A NEW project for the creation of an inland sea has been advanced and advocated by General Fremont, at present Governor of Arizona. The removal of a barrier ridge, he affirms, would admit the waters of the Gulf of California into an ancient basin, and would create a navigable inland sea 200 miles long, 50 miles broad, and 300 feet deep. This piece of engineering, which is very like Roudaire's Algerian inland sea project, he claims, would convert what is now a desert region into a commercial highway, and would greatly improve the climate of Southern Arizona and California.

AT last week's meeting of the Paris Academy M. de Lesseps announced that in a letter of April 15, Capt. Roudaire states that the sounding operations were being pursued with vigour and success, and that so far they justified the expectation of being able to create an interior Algerian Sea.

AN exploring expedition to New Guinea is being organised at Wellington, New Zealand, on a large scale.

L'Exploration states that a new African expedition is being organised at Lisbon, under the direction of Capt. Paiva d'Andrada. Its object is the exploration of the Zambezi and the foundation of commercial and agricultural colonies in the territories of Fete and Zoumbo.

IN the *Verhandlungen* of the Berlin Geographical Society, Nos. 2 and 3, is a suggestive paper by Dr. Güssfeldt on the Ice-Conditions of High Mountains. No. 80 of the *Zeitschrift* contains a paper of much originality, on the causes which have conduced to the formation of the surface of Norway, by Prof. Kjerulf.

Globus is publishing a valuable series of articles on the Red River of the North, from the French of M. de Lamothé, and the Hindu Kush Alps by Herr Emil Schlagentweit.

NOTES

THE Annual London Meeting of the Iron and Steel Institute will be held on Wednesday, Thursday, and Friday, May 7, 8, and 9, at the Institution of Civil Engineers, 25, Great George Street, Westminster. The following programme of proceedings has been arranged:—On Wednesday the retiring President (Dr. C. W. Siemens, F.R.S.), will take the chair at 10.30 A.M., and the President-Elect (Mr. Edward Williams) will deliver his inaugural address. The Bessemer Medal for 1879 will be presented to Mr. Peter Cooper, of New York, "the father of the American iron trade." The adjourned discussion on the paper read at Paris by Mr. Daniel Adamson, C.E., of Manchester, on "The Mechanical Properties of Iron and Mild Steel," will be resumed, and Mr. Adamson will present a supplementary paper. On the following days the following papers will be read and discussed:—"On the Use of Steel in Naval Construction," by Mr. Nathaniel Barnaby, C.B., H.M.'s Chief Constructor. "On the Use of Steel in the Construction of Bridges," by Mr. H. N. Maynard. "On the Elimination of Phosphorus in the Bessemer Converter," by Mr. Sydney G. Thomas, F.C.S., and Mr. Percy C. Gilchrist, A.R.S.M., F.C.S. "On the Removal of Phosphorus and Sulphur during the Bessemer and Siemens-Martin Processes of Steel Manufacture," by Mr. G. J. Snelus, F.C.S., &c. "On a New Volumetric Method of Determining Manganese in Manganiferous Iron Ores, Spiegeleisen, Steel, &c.," by Mr. John Pattinson, F.I.C., Newcastle-on-Tyne. "On a Ready Means of Moulding Lime, and making Lime or Basic Bricks and Linings for Furnace Converters, &c.," by Mr. Edward Riley, F.C.S., F.I.C., &c. "On a Practical Combination of the Bessemer and Puddling Processes," by Mr. Edwin

Pettitt, Cheltenham. "On the Results of Working the Godfrey-Howson Furnaces at the Works of Tamaris, Gard, France," by M. Escalle. "On the Chemistry of Puddling," by Mr. H. Louis, A.R.S.M., Londonderry, Nova Scotia. "On a New Process for Protecting Iron and Steel against Rust," by Prof. Barff.

THE Rev. W. H. Dallinger, F.R.S., has been appointed Rede Lecturer at Cambridge this year.

AMONG those on whom the degree of LL.D. has been conferred by the Glasgow University is Dr. C. W. Siemens, Prof. Hull, director of the Irish Geological Survey, and Prof. Dickson, newly elected to the Edinburgh Chair of Botany.

THE death is announced of Dr. Charles Murchison, F.R.S.

MADEMOISELLE ADELAIDE MONTGOLFIER, a daughter of the inventor of balloons, is still alive, aged eighty-nine years. She is possessed of a large fortune, and presented the Museum of the Aëronautical Academy with a copy of the large medal executed by Houdon, and representing her father and uncle, who was associated with him in the invention of balloons. This medal was executed to commemorate that event. A movement will be got up in France for celebrating the centenary of that memorable event, which took place in June, 1783, in the vicinity of Lyons.

THE annual conference on National Water Supply, Sewage, and Health, will be held in the rooms of the Society of Arts, on Thursday and Friday, May 15 and 16, 1879. There will be an Exhibition of Mechanical and Chemical Apparatus in connection with Water Supply, Treatment of Sewage, and Health. Papers on any of above heads are requested. The object of the conference is to discuss existing information in connection with the results of any systems already adopted in various localities, referring to the subjects of National Water Supply, Sewage, and Health; to elicit further information thereon; and gather and publish, for the benefit of the public generally, the experience gained. The introduction and discussion of untried schemes will, therefore, not be permitted. The papers accepted for the conference will be printed and circulated at the meetings.

PROF. TYNDALL has been instructing the Select Committee appointed to inquire into the subject of electric lighting. He gave a brief sketch of the history of electricity and of its application to lighting purposes, illustrating his evidence by several interesting experiments. Seeing what had been done by Mr. Edison, he believed that many of the existing difficulties would be removed; for public illumination he was afraid platinum would be too expensive. Dr. Siemens has also been giving important evidence on the subject.

WE are glad to see that Dr. Brehm, the well-known naturalist, accompanies the Crown Prince of Austria in his tour through Spain.

WE learn from *Science News* that the Brazilian Government has appointed Mr. Orville A. Derby as geologist to the National Museum at Rio de Janeiro, to succeed the late Prof. Hartt, whose assistant Mr. Derby had been for a number of years. Next to Prof. Hartt, Mr. Derby was probably best acquainted with the geological structure of Brazil, and he is, therefore, the one most fitted to carry on the work. He accompanied Prof. Hartt, as an assistant, on both of his Amazonian trips, in 1870 and 1871, and largely shared in the honours arising from the discoveries made during those years, by which a firm foundation was laid for the complete geological exploration of the great valley.

THE following arrangements have been made for the meetings of the Society of Arts after Easter:—At the ordinary meetings on Wednesday evenings, at eight o'clock: May 14—"The Automatic Hydraulic Brake," by E. D. Barker; May 21—"Edison's New Telephone," by Conrad W. Cooke. In the African Section, on Tuesday evenings at eight o'clock: May 27—"The Contact of Civilisation and Barbarism in Africa, Past